

breed, as the late Mr. A. Anderson found eggs, if my memory does not fail me, on some jheels by the side of the railway between Lucknow and Hardoi.

No. 1617. *PODICIPES ALBIPENNIS*. *Indian Little Grebe or Dabchick*.

Pandubi, Thildubi [H.].

A very common and permanent resident. I have taken its eggs several times on the weedy ponds which form in hollows near villages during the "rains." Eggs four to six in number, white at first, but brown or chocolate after being stained in the nest of wet weeds.

Average of 11 Lucknow eggs	1.38" × 0.93"
Measurement of largest egg	1.44" × 0.95"
„ smallest egg	1.35" × 0.90"

XVI.—*On the Ibis olivacea of Dubus.*

By T. SALVADORI, F.M.Z.S.

THE *Ibis olivacea* of Dubus is perhaps the least known of the members of the family Ibididæ, and one about which many mistakes have been made, even quite lately. Having recently received an adult specimen, procured by Signor Leonardo Fea in Prince's Island, I hope to be able to settle the status of the species.

Ibis olivacea was first described by Dubus (Bull. Ac. Brux. 1837, p. 105), who gave at the same time a very good figure, which, strange to say, has remained unnoticed by every ornithologist treating of this species. The type-specimen was contained in a box of skins, said to be from Guinea, bought by the King of the Belgians, and presented to the Museum of Natural History of Brussels. The box contained also the type-specimen of *Ardea calceolata*, described and figured by Dubus in the same Bulletin*.

Later, in 1845, Dubus again figured *Ibis olivacea* in his 'Esquisses Ornithologiques,' i. pl. 3. Apparently from this figure Reichenbach took that which he published in the

* "Description d'une Espèce nouvelle de *Héron*," par le Chevalier B. Dubus (*op. cit.* pp. 39-41, pl.).

‘Grallatores’ (t. 133. f. 2384) ; but while Dubus carefully figured the tarsi covered anteriorly with small hexagonal scales, Reichenbach represented them covered anteriorly with transverse scales !

G. R. Gray, in 1849 (Gen. B., App. p. 26), included *Ibis olivacea* in the genus *Geronticus*, while Reichenbach, in 1852 (Av. Syst. Nat. p. xiv), placed it in the genus *Comatibis*, and Hartlaub, in 1854 (*J. f. O.* 1854, p. 295), in the genus *Harpiprion*. Bonaparte, in 1855, included it first (Compt. Rend. xl. p. 725, n. 166) in the genus *Bostrychia*, and afterwards (Consp. Gen. Av. ii. p. 153) in the genus *Hagedashia*, adding that *I. olivacea* was represented not only in the Museum of Brussels, but also in the Paris Museum. I am not aware that the latter statement has been confirmed.

We now come to Cassin, who first, in 1857 (Pr. Ac. Philad. 1857, p. 39), attributed to *Ibis olivacea* a young bird obtained by Duchailu on the River Muni, saying :—“ A young bird, but evidently of this species. . . . General colours as figured by Baron Dubus, but with the feathers of the neck and breast having large central spots of dark fulvous, with which also a few of the feathers of the crest are striped longitudinally.”

Two years later (Pr. Ac. Philad. 1859, p. 174), in a ‘Catalogue of Birds collected on the Rivers Camma and Ogobai by Duchailu,’ Cassin again mentioned *Ibis olivacea*, saying :—“ Several specimens from the Camma, and formerly from the Moonda. The adult of this handsome species is described and figured very accurately by the Baron Dubus. Young ♂. General colours as in the adult, but paler. Under parts of the body with large oval spots of dull yellowish.” I think that as Cassin was able from his specimens to judge of the great accuracy of Dubus’s description and figure, we may assume that his identification was correct.

Schlegel, in 1863 (Mus. P.-B., Ibis, p. 9) made the rash supposition that *I. olivacea* was the same as *Ibis comata*, but Heuglin, in 1873 (Orn. N.O.-Afr. ii. p. 1145), shewed that the surmise was quite untenable.

Nothing more was heard of *Ibis olivacea* till Dohrn visited Prince's Island, and there found the bird (P. Z. S. 1866, p. 330). Mr. Keulemans, who accompanied Dr. Dohrn, has, moreover, given a good account of it (Ned. Tijdschr. Dierk. iii. p. 39).

Dr. Reichenow has also attributed to *I. olivacea* a young bird from Kameroun (J. f. O. 1874, p. 378; 1890, p. 108), the description of which agrees pretty well with that of the young given by Cassin; only Dr. Reichenow describes the bird as having the auricular region edged below by a whitish stripe, a feature found in *Hagedashia hagedash*, but certainly wanting at least in the adult of *I. olivacea*, which has the auricular coverts paler, slightly indicating a pale or whitish band.

This was the status of *I. olivacea* when Mr. Elliot in 1877 published (P. Z. S. 1877, pp. 477-510) his "Review of the *Ibidine*"; in this paper the author described and figured, under the name of *Lampribis* (nov. gen.) *olivacea* (Dubus), some birds from Denkera, in Ashantee, sent by Ussher, which have since been supposed to belong to a different species. These specimens, however, agree very well with the young or immature birds described by Cassin as the young of *Ibis olivacea*.

Since the publication of Elliot's paper, *I. olivacea* has been mentioned by Mr. Büttikofer among the birds of Liberia, specimens having been collected in several places [Not. Leyd. Mus. vii. (1885) p. 243; x. (1888) p. 101; xi. (1889) p. 127]; but of these I shall treat presently.

Ibis olivacea was found also in the island of S. Thomas by Mr. F. Newton, who sent several specimens of it to the Museum of Lisbon; they have been mentioned by Prof. Barboza du Bocage [Jorn. Sc. Lisb. no. xlvi. (1888) pp. 233, 234; (2) no. ii. (1889) p. 144 (S. Miguel); no. iii. (1889) p. 210 (S. Miguel); no. vi. (1891) p. 84 (Angolares)].

Dr. Sharpe (Cat. B. xxvi. p. 38), like Mr. Elliot, attributed to *Lampribis olivacea* some specimens from Denkera (Ashantee), and in his key to the genera the genus *Lampribis* was included in the section having the "anterior aspect of the

tarsus plated with distinct transverse scales." As the specimen of *Ibis olivacea* which I had from Prince's Island had the "anterior aspect of the tarsus reticulated with numerous hexagonal scales," I could not believe otherwise than that my bird was absolutely different from those from Denkera. Strange to say, Mr. Ogilvie-Grant, having, at my request, examined the specimens from Denkera in the British Museum attributed to *Lampribus olivacea*, has found that they have the anterior aspect of the tarsus reticulated with hexagonal scales, shewing that Sharpe's Key to the genera of the Ibises is quite wrong and misleading, so that in respect of the tarsi my bird does not differ from those from Denkera.

Rothschild, Hartert, and Kleinschmidt (Nov. Zool. iv. (1897) p. 377) thought that the bird found by Ussher in Denkera, and figured by Elliot, P. Z. S. 1877, pl. li., was different from *Ibis olivacea* Dubus, and they proposed for the former the name of *Lampribus rara*, saying that "it is probable that Dubus's bird is nothing more than an old *Hagedashia hagedash*, or a closely allied species not yet known to us except by the type." This opinion has been shared both by Dr. Sharpe (Cat. B. xxvi. p. 266; Hand-list, i. p. 187) and by Dr. Reichenow, who, in his recent work 'Die Vögel Afrikas' (i. (2) p. 326), has utterly ignored *I. olivacea* Dubus, and has included the name among the synonyms of *Hagedashia hagedash*.

I think that I am not mistaken in stating, first, that *Ibis olivacea* Dubus is a perfectly distinct species from *H. hagedash*, to which it is very distantly allied*; secondly, that *Ibis olivacea* is known not only from the type in the Museum of Brussels, but also from specimens in the Museums of Philadelphia, Leyden, and Lisbon, and probably others in the Museums of Paris and Stettin.

The bird which I possess—obtained by Signor Leonardo Fea in Prince's Island—is labelled "♂, 26 January, 1901." It appears to be an adult having a very long and full crest;

* In this opinion I am supported by Dr. Dubois, who has, in the Museum of Brussels, the type of *I. olivacea*, and by Dr. Finsch, who has at least one specimen in the Leyden Museum.

its beak is very much like that of *Bostrychia carunculata* both in size and shape, and is much shorter and weaker than that of *Hagedashia hagedash*, the colouring also being very different; there is no white line under the auricular region, which is slightly paler than the rest of the head and neck, and the greater coverts of the secondaries, instead of being golden bronze, are steel-blue; the general coloration above and below is much browner than in *H. hagedash*, and the upper wing-coverts less bronze and more green. Altogether, *Ibis olivacea* is a very different bird from *H. hagedash*.

As to the generic position of *Ibis olivacea* Dubus, it cannot be settled until we first identify *Lampribus olivacea* Elliot (= *L. rara* R., H. et K.), the type of the genus *Lampribus*. For this purpose I must notice that Rothschild and Hartert's supposition of *Lampribus olivacea* Elliot being different from *Ibis olivacea* Dubus, was evidently made without knowing what Dubus's species was, and under the impression that "probably it was nothing more than an old *Hagedashia hagedash*"; but I have shown already that it is a totally different bird. This point being established, we must try to identify the Denkera bird, which Elliot attributed to *Lampribus olivacea* (Dubus), and which Rothschild and Hartert have named *L. rara*. Not having access to the Denkera bird myself, I asked my friend Mr. Ogilvie-Grant to examine the Denkera specimens in the British Museum, especially as regards the shape of the bill, and he answers that in size and shape the bill is exactly like that of *Bostrychia carunculata*, which is the case also with the bill of my specimen of *Ibis olivacea* from Prince's Island, so that in that respect *Lampribus olivacea* Elliot (= *rara* R., H. et K.) and *Ibis olivacea* Dubus perfectly agree. As to the tarsi the two birds also agree, both having them reticulated with hexagonal scales. I have already mentioned the mistake made by Dr. Sharpe in attributing the genus *Lampribus* to the section with transverse scales on the anterior aspect of the tarsi.

A point which has puzzled me much in the identification of *L. olivacea* Elliot is the coppery-red colour of the smaller

upper wing-coverts, forming a distinct patch on the wing, as represented in Elliot's plate (P. Z. S. 1877, pl. li.). This feature is not mentioned in Elliot's description, and from Mr. Ogilvie-Grant's statements (*in litt.*) it appears that no such character exists in the specimens from Denkera, so that probably the coppery patch on the plate is owing to the fact that the artist tried to shew the coppery reflexions which in some lights are shown by the smaller upper wing-coverts on the curve of the shoulders.

Another point remains to be discussed as regards the colouring of the neck and breast of *L. olivacea* Elliot, those parts being of a "rich dark buff, every feather edged with dark olive-brown." But a similar coloration had been already described by Cassin as distinguishing the young birds of *Ibis olivacea* which he had received from Muni, Moonda, and Camma, together with fully adult birds, the latter perfectly agreeing with Dubus's plate.

I think, after all that I have said, that *Lampribus olivacea* Elliot is an immature bird of Dubus's species, and *Lampribus rara* a synonym of it. I may say that Dr. Finsch* is also inclined to believe that such is the case, and for myself I take it to be certain. It follows that *Ibis olivacea* Dubus is the real type of the genus *Lampribus*.

As to the affinities of the genus *Lampribus*, I should say that they are mainly with the genus *Bostrychia*, both of them having a bill of exactly the same shape and even size, a full crest on the nape, and reticulated tarsi, but differing much as regards the lores and sides of the head, which are naked in *Lampribus*, but feathered in *Bostrychia*, the latter having the additional character of a fleshy wattle on the throat.

Possibly *Lampribus* is allied to *Lophotibis*, but I have no means of ascertaining this point, as I do not possess a specimen of *L. cristata*. According to Sharpe's Key to the Genera, *Lophotibis* has the anterior aspect of the tarsi plated

* The Leyden Museum possesses one specimen of *I. olivacea* from Prince's Island (*Keulemans*), besides another *Lampribus* from Liberia (*Büttikofer*), probably belonging to a distinct species.

with transverse scales ; and *if such is the case*, the two genera belong to two different sections *.

The geographical distribution of *L. olivacea* would be as follows :—The type specimen is said to have been from Guinea, which is very probable, but we have no sure proof of this, as I do not think that the name of the collector is known. Besides, the bird is found in Prince's and S. Thomas's Islands. It appears from Cassin's statements that Du-chailu's specimens collected on the Camma, Muni, and Moonda Rivers belong to the same species, as well as the specimens from Kameroun collected by Reichenow and Zenker ; Dr. Reichenow also includes Angola in the range inhabited by *L. olivacea*, and mentions Schütt as the name of the collector. From what I have said, Ashantee is inhabited by the same species, which therefore appears to be distributed over the western coast of Africa from Angola to Ashantee, and to be also found in the islands of the Bight of Guinea (Prince's Island and S. Thomas Island).

As regards the Liberian birds mentioned by Büttikofer, I have some doubt as to whether they may not belong to a distinct species. I have seen one of the specimens (a male), collected by Büttikofer at Soforé Place, June 11, 1880, which differs strikingly from that which I have from Prince's Island, and from the description of *L. olivacea* given by several authors, in having the greater wing-coverts of the secondaries not dark purple or steel-blue, but golden coppery on the outer web, slightly edged with purple, resembling in that respect *Hagedashia hagedash*. Should this character be constant in adult specimens from Liberia, the form residing there would be specifically different, and I propose for it the name *Lampribis*

* Quite recently, while this paper was passing through the press, Dr. Dubois has published the twelfth fascicule of the 'Synopsis Avium' containing the Family Ibisidæ. There is a note concerning *Ibis olivacea*, which he rightly declares totally different from *Hagedashia hagedash*, but he has failed to recognise that *Ibis olivacea* and *Lampribis rara* are one and the same species. Besides, he has attributed Dubus's species to the genus *Lophotibis*, a point which I am not able to discuss ; but should he be right, then *Lampribis* would not be different from *Lophotibis*. For the present I am inclined to consider the two genera distinct.

*splendida**. The specimen which I have examined is fully adult. It has a naked frontal shield at the base of the culmen, *broad and rounded posteriorly*, while this shield is narrow and almost acute posteriorly in the specimen that I have of *L. olivacea* from Prince's Island. The colours are as follows:—Head, neck, and lower parts brown with a slight bronze lustre, more evident on the sides and under tail-coverts; the ear-coverts are paler brown; the long feathers of the nuchal crest have a purple lustre, in some lights bluish or greenish; the back, scapularies, and inner remiges are bronze; the lower back and upper tail-coverts darker and more green; the smaller and median wing-coverts metallic bronze-green with coppery reflexions; the greater coverts of the secondaries *golden coppery*, narrowly edged with purple on the outer web, deep blue, nearly black, on the inner web; the primary-coverts, like the quills, black, with steel-blue gloss; the under wing-coverts black, glossed with dark green or blue; the tail dark bluish green: "bill red; feet greenish flesh-coloured; iris grey-brown" (*Büttikofer*). Wing 330 mm.; tail 150; culmen (without the frontal shield) 111; tarsus 72.

I add the full synonymy of *Ibis olivacea* Dubus, and a complete description of the bird from Prince's Island.

LAMPTRIBIS OLIVACEA (Dubus).

Ibis olivacea Dubus, Bull. Acad. Bruxelles, 1837, p. 105, pl. — (fig. optima) (Guinée) †; id., Esquiss. Orn. i. tab. 3 (1845); Rehn., Grallat. t. 133. f. 2384 (1851) (ex Dubus, sed fig. minus exacta); Hartl., Abh. naturw. Verh. Hamb. ii.

* The synonymy of this form would be as follows:—

Ibis olivacea Büttik. (nec Dubus), Not. Leyd. Mus. vii. p. 243 (Baria and Soforé Place) (1885); x. p. 101 (Du Queah, Liberia) (1888); xi. p. 127 (♂ ad., Farmington River, Liberia), p. 136 (Liberia) (1889); id. Reisebild. aus Liber. ii. p. 476 (1890).

Lampribis rara part., Sharpe, Hand-list, i. p. 187 (Liberia) (1899).

Theristicus rarus, part., Rehnw. Vög. Afr. i. 2, p. 328 (Liberia) (1901).

† "Note sur l'*Ibis olivacea*, *Ibis olivâtre*" (l. c. pp. 105–106 avec planche).

2, p. 41. n. 448 (1852); id., J. f. O. 1854, p. 256 (Mus. Brux.); Heugl., Orn. N.O.-Afr. ii. p. 1145 (crit.) (1873); Rehnw., J. f. O. 1874, p. 378 (juv., Kamerun), 1875, p. 48 (Kamerun), 1877, pp. 144, 145, 156, 274 (West Afr.); Rothsch. et Hartl., Nov. Zool. iv. p. 376 (= *Hagedashia hagedash*, ad.?) (1897); Sharpe, Cat. B. Brit. Mus. xxvi. p. 266 (= *H. hagedash*) (1898); Rehnw., J. f. O. 1900, p. 370 (Kamerun: *Zenker*).

Geronticus olivaceus G. R. Gr., Gen. B., App. p. 26 (1849); Hartl., Orn. Westafr. p. 275 (Munifluss: *Duchailu*) (1857); Cass., Pr. Ac. Philad. 1859, p. 174. n. 217 (ad. and young) (Camma and Moonda: *Duchailu*); Hartl., J. f. O. 1861, p. 271 (Camma); Dohrn, P. Z. S. 1866, p. 330 (Prince's Isl.); Sousa, Jorn. Sc. Lisb. no. xlv. p. 44 (1887).

Comatibis olivacea Rehnw., Av. Syst. Nat. p. xiv, t. 133. f. 2384 (1852); Heine, J. f. O. 1860, p. 201 (Camma and Moonda: *Duchailu*); Oust., N. Arch. Mus. (2) ii. p. 145 (1879) (ex Cassin); Boc., Jorn. Sc. Lisb. no. xlvi. pp. 233, 234 (S. Thomé: *F. Newton*) (1888); (2) no. i. pp. 35, 36 (1889); no. ii. p. 144 (S. Miguel: *F. Newton*) (1889); no. iii. p. 210 (S. Miguel, costa occidental) (1889); no. vi. p. 84 (Angolares: *F. Newton*) (1891).

Harpiprion olivaceus Hartl., J. f. O. 1854, p. 295 (Guinea, Mus. Brux.); Cass., Pr. Ac. Philad. 1857, p. 39 (juv., River Muni: *Duchailu*).

Bostrichia olivacea * Bp., Compt. Rend. xl. p. 725. n. 166 (1855).

Hagedashia olivacea Bp., Consp. ii. p. 153 (1855) (Mus. Brux. et Paris).

Geronticus (Comatibis) olivaceus Hartl., Orn. Westafr. p. 231. n. 657 (Guinea, Mus. Brux., Paris) (1857).

Ibis comata part., Schleg., Mus. P.-B., Ibis, p. 9 (1863); Gieb., Thes. Orn. ii. p. 384 (part.) (1875).

Ibis (Geronticus) olivaceus Keulem., N. T. D. iii. p. 397 (Prince's Isl.) (1866).

* I suppose that it is by a misprint that Dr. Sharpe in the synonymy of this species (Cat. B. Brit. Mus. xxvi. p. 38) writes *B. ochracea* instead of *B. olivacea*.

Geronticus (Hagedashia) olivaceus G. R. Gr., Hand-list, iii. p. 40. n. 10229 (1871).

Ibis (Hagedashia) olivacea Heugl., Orn. N.O.-Afr. ii. p. 1145 (Anmerk.) (1873).

Lampribus olivacea Elliot, P. Z. S. 1877, p. 507 (Guinea, Prince's Isl., Denkeria); Sharpe, Cat. B. Brit. Mus. xxvi. p. 38 (part.) (1898); Salvad., Mem. R. Ac. Tor. (2) liii. p. 13 (1903) (Is. del Principe).

Theristicus olivaceus Rehnw., J. f. O. 1890, p. 108 (Oberen Kamerun).

Plegadis olivaceus part., Shelley, B. Afr. i. p. 156. n. 2107 (1896).

Lampribus rara Rothsch., Hart., & Kleinschm., Nov. Zool. iv. p. 377 (Denkeria) (1897) (immat.); Sharpe, Hand-list, i. p. 187 (part.) (1899); Dubois, Syn. Av. p. 903. n. 10928 (fasc. xii. 1902).

Theristicus hagedash part., Rehnw., Vög. Afr. i. 2, p. 325 (1901).

Theristicus rarus part., Rehnw., op. cit. p. 328 (Kamerun, Camma, Munda, Muni, ? Angola, S. Thomas, Prinzeninsel) (1901).

Lophotibis olivacea, Dubois, Syn. Av. p. 903. n. 10927 (fasc. xii. 1902).

(Mas ex Ins. Principis.) Capite et collo fusco-brunneis, plumis in medio pallidioribus; regione parotica pallide brunnea; plumis occipitalibus latiusculis, valde elongatis, fuscis, ad marginem viridi, vel cyaneo nitentibus; pectore et abdomine saturate fuscis paullum viridi nitentibus, scapis pallidioribus; subcaudalibus saturate viridinitentibus; dorso scapularibusque nitide olivaceo-æneis; uropygio et supracaudalibus cyanescentibus; tectricibus alarum nitidissime viridibus, majoribus cum tectricibus remigum primariorum remigibusque secundariis cyaneo-chalybeis; remigibus primariis nigris, exterius cyanescentibus; cauda nigra, cyanescente: "cute nuda capitis nigra; pedibus sordide flavidis; iride brunnea" (Dohrn). Long. tot. circa 600 mm.; al. 340; caud. 130; rostri culm. 110; tarsi 65.

A female mentioned by Dohrn had the long feathers of the head non-metallic; another female from Prince's

Island, in the Leyden Museum, obtained by Mr. Keulemans, according to Dr. Finsch (*in litt.*), agrees in nearly every respect with the male, except in the following points:—The feathers of the crest, which are as long, if not longer, than those in the male, are uniform brown, without the metallic lustre; the coloration of the back is a little darker, the upper wing-coverts shew less of the bronze lustre, and the feathers of the neck, sides of the head, and the lower part of the crest have lighter shafts; the dimensions also are somewhat smaller—wing 313 mm.; tail 110; tarsi 67. According to Keulemans, “the bill is brick-red; the iris brown; the feet reddish yellow; the naked skin of the head black.”

It would appear from Cassin’s statements that the “young bird has the under parts with oval spots of dull yellowish.”

Mr. Keulemans gives a good account of the habits of this bird in Prince’s Island, where it is known under the name of “Corvao.”

In the preparation of this paper I have had to resort to Dr. Dubois, Dr. Finsch, and Mr. Ogilvie-Grant for information, which has been freely and kindly given, and to them I owe my best thanks.

XVII.—*On the Eggs of the Moa.* By Dr. A. B. MEYER.

WHEN visiting the Museum of the Royal College of Surgeons of England in the autumn of 1901, I saw an egg of the Moa, and not having been previously aware of its existence I tried to hunt it up in the literature of the subject. On this occasion, as well as formerly, when studying the literature of the eggs of *Æpyornis* (see Abh. Ber. k. Zool. Mus. Dresden, vol. ix. no. 7, 1901), I collected certain facts concerning the known eggs of the Moa—reproduced here in an abbreviated form.

Moa’s eggs are very much rarer than those of *Æpyornis*, thirty-six of the latter being known, whereas only three or four perfect Moa’s eggs are as yet recorded, besides a dozen or